

617.8-METHOD OF MEASUREMENT:

The quantities of work done will be measured by the linear foot (meter) of "Pipe Railing", "Ferrous Metal Railing", or "Aluminum Railing", as the case may be, complete in place and accepted, which will be determined by the overall length as shown on the Plans, or as authorized by the Engineer. When metal railing is used with concrete posts, the pay length for the railing will be the sum of all the net lengths between posts.

Reinforcing steel required in concrete posts for "Ferrous Metal Railing" will be measured and paid for as provided in 602.

Concrete posts for "ferrous Metal Railing" will be measured and paid for as provided in 601.

617.9-BASIS OF PAYMENT:

The quantities, determined as provided above, will be paid for at the contract unit prices bid for the items listed below, which prices and payments shall be full compensation for furnishing all the materials and doing all the work described in a workmanlike and acceptable manner, including all the labor, tools, equipment, supplies, and incidentals necessary to complete the work.

617.10-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
617001-*	PIPE RAILING	LINEAR FOOT (METER)
617002-*	FERROUS METAL RAILING	LINEAR FOOT (METER)
617003-*	ALUMINUM RAILING	LINEAR FOOT (METER)

* Sequence number

SECTION 618
CAST BRONZE AND ROLLED COPPER-ALLOY
EXPANSION PLATES

618.1-DESCRIPTION:

This work shall consist of furnishing and erecting cast bronze or rolled copper-alloy expansion plates, to be used as friction type expansion or bearing plates, in accordance with the details and dimensions shown on the Plans and in accordance with this Specification.

618.2-MATERIALS:

Materials shall conform to the requirements specified in the following Subsections of Division 700:

<u>MATERIAL</u>	<u>SUBSECTION</u>
Bronze Castings for expansion Plates	709.18
Rolled Copper-Alloy Expansion Plates	709.19

CONSTRUCTION METHODS

618.3-GENERAL:

Plates shall be accurately set in position as shown on the Plans and shall have a uniform bearing over the entire area. Provisions shall be made to keep the plates in position while masonry is being placed. When finishing is indicated on the Plans or directed, the surfaces shall comply with the American Standards Association surface roughness requirements as defined in ASA B46, 1-55, ASA 125.

618.4-CAST BRONZE PLATES:

Cast bronze plates shall be cast according to details shown on the Plans. Sliding surfaces shall be planed parallel to the movement of the span and polished unless otherwise detailed.

When self-lubricated bronze plates are specified, they shall conform to 709.18 unless otherwise provided. They shall be trepanned in a geometric pattern of recesses to receive a lubricating material suitable for long-life service of the bearing face. The lubricated area shall comprise a minimum of 25 percent of the bearing face to provide a coefficient of friction for bronze on steel of approximately 10 percent for loads of 1,000 to 2,000psi. (7 to 14 MPa). Only the sliding surfaces shall be lubricated.

618.5-ROLLED COPPER-ALLOY EXPANSION PLATES:

Rolled copper-alloy expansion plates shall be furnished according to the details shown on the Plans. Finishing of rolled plates will not be required if they have a plane true and smooth surface. If finishing is indicated on the Plans or directed, it shall be in the direction of the movement of the span.

618.6-METHOD OF MEASUREMENT:

The quantity of work done will be measured by the pound (kilogram). Unless otherwise provided, the weight to be paid for shall be the certified scale weight in pounds (kilograms) of the plates placed in the structure but not to exceed the weight as computed from the net dimensions shown on the Plans. The weight per cubic foot of cast bronze or copper-alloy plates shall be considered as 536 lb. (8.6 Mg per cubic meter).

618.7-BASIS OF PAYMENT:

The quantities, determined as provided above, will be paid for at the contract unit prices bid for the items listed below, which prices and payments

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shall be full compensation for furnishing all the materials and doing all the work prescribed in a workmanlike and acceptable manner, including all materials, labor, tools, equipment, supplies, and incidentals necessary to complete the work.

618.8-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
618001-*	CAST BRONZE EXPANSION PLATES	POUND (KILOGRAM)
618002-*	ROLLED COPPER-ALLOY EXPANSION PLATES	POUND (KILOGRAM)

* Sequence number

SECTION 619
WATERPROOFING

619.1-DESCRIPTION:

This work shall consist of waterproofing concrete retaining walls, abutments, earth-filled arches, and concrete decks, either in the form of dampproofing (primers with bituminous paint coat) or membrane waterproofing (primers with bituminous membrane fabric, with or without protection course) as specified on the Plans. Dampproofing shall consist of a primer and two coats of bituminous materials. Membrane waterproofing shall consist of a primer, two layers of fabric, and three moppings of hot bituminous material. The work shall be done in accordance with the Specifications and as shown on the Plans.

619.2-MATERIALS:

The materials shall conform to the requirement of the several Subsections of Division 700 of these Specifications as follows:

MATERIAL	SUBSECTION	TYPE
Dampproofing Primer	705.4, 705.11 or 705.8	SS-1 or SS-1h CSS-1 or CSS-1h
Dampproofing Agent	705.4, 705.11 705.7	SS-1 or SS-1h CSS-1 or CSS-1h
Membrane Waterproofing	705.8	
Membrane Waterproofing	705.7	
Waterproofing Fabric	715.8	
Reinforcing Steel	709.3	
Hot-Poured Elastic Type Concrete Joint Sealer	708.3	